

REMARKS

Reconsideration and allowance of the present patent application based on the following remarks are respectfully requested. Claims 19-24, 36-38 and 41 have been cancelled herein without prejudice or disclaimer to the subject matter recited therein.

Applicant appreciates the Examiner's indication that claims 15-18 and 42-47 are allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph and appreciates the Examiner's indication that claims 29-31 and 33 are allowed.

Claim Rejections – 35 U.S.C. §101

Claims 19-25, 36-38 and 41 were rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter.

The Examiner contends that a description of digital message formats and rules for exchanging messages do not fall under one of the four categories of invention. Applicant respectfully disagrees.

However, in order to advance prosecution, claims 19-24, 36-38 and 41 have been cancelled herein without prejudice or disclaimer to the subject matter recited therein.

Therefore, the rejection of claims 19-25, 36-38 and 41 under 35 U.S.C. §101 is rendered moot.

Claim Rejections – 35 U.S.C. §112

Claims 1-24 and 42-47 were rejected under 35 U.S.C. §112, second paragraph, as being allegedly indefinite. The rejection is respectfully traversed.

The term "that port" in claim 1 clearly refers to the first ingress or egress congested port. However, without conceding to the rejection, claims 1, 15 and 42 have been amended herein to specifically recite "the ingress or egress port," without any intention of narrowing the scope of these claims.

Therefore, it is respectfully requested that the rejection of claims 1-24 and 42-47 under 35 U.S.C. §112, second paragraph be withdrawn.

Claim Rejections – 35 U.S.C. §102

Claims 1-14, 19-24, 26-28, 35-41 and 48 were rejected under 35 U.S.C. §102(e) based on U.S. Pub. No. 2005/0088969 to Carlsen et al. (hereinafter “Carlsen”).

Claims 19-24, 36-38 and 41 have been cancelled herein without prejudice or disclaimer to the subject matter recited therein. Therefore, the rejection of claims 19-24, 36-38 and 41 is rendered moot. The above rejection is respectfully traversed with respect to the remaining claims.

Applicant notes that Carlsen was cited in the Office Action dated August 17, 2009 (approximately two years ago). In that Office Action, Carlsen was relied upon to reject claim 1 as being obvious in combination with another reference (Gupta et al.). In the August 17, 2009 Office Action, it is stated that:

“Carlsen discloses all aspects of the claimed invention, except... sending from the upstream port to a further upstream port a message informing such further upstream port of the congestion at the congested port...”
(emphasis added).

However, in the present Office Action, the Examiner contends that Carlsen discloses all the features recited in claim 1. This position is inconsistent with the earlier position of the Office.

Applicant respectfully objects to the piecemeal prosecution of this application. The piecemeal prosecution of this application places an undue and unfair burden on the Applicant and is not in line with the Office’s own guidelines. See MPEP 707.02, 707.02(g), 904, 904.02 and 904.03. Per MPEP 707(g), piecemeal examination should be avoided as much as possible. The Examiner ordinarily should reject each claim on all valid grounds available, avoiding, however, undue multiplication of references.

The piecemeal nature of the prosecution of this application is severely penalizing the Applicant by generating entirely unnecessary costs and delaying the prosecution process.

In rejecting claim 1, the Examiner contends that paragraph [0104] in Carlsen discloses the feature of sending from the upstream port to a further upstream port a message informing the further upstream port of the congestion at the first ingress or egress congested port. The examiner seems to believe that the statement that cell credit congestion notification is unified “across the board” discloses the sending from an upstream port to a further upstream port of a congestion notification in respect of the original congested port.

Carlsen relates to congestion notification within a switch and a network of switches. As described at paragraph [0008] in Carlsen, the invention relates to the problem of "head of line blocking." Referring to the description and FIG. 1, a congestion notification mechanism is used that provides a congestion status for all destinations in the switch at each ingress port. The system of Carlsen is predominantly described with reference to a fiber channel switch and fabric.

As stated at the bottom of paragraph [0009] in Carlsen, "If a destination port becomes congested, the flow control process determines which virtual channel on the inter switch link is affected, and sends an XOFF message so informing the upstream switch. The upstream switch will then stop sending data on the affected virtual channel."

The Office Action further refers to a description of the "cell credit manager 440" which uses tables to maintain a cell credit count of cells in the virtual output queues to determine the amount of data they store. In addition, a cell credit accumulator 447 is provided which maintains credit counts for each switch destination address (SDA). When some threshold is crossed, an XOFF or XON event is sent to the appropriate XOFF mask. Thus, the XOFF masks are maintained in an up-to-date state for controlling congestion notification between one link within the switch or between the switches.

In paragraphs [0100] to [0104] in Carlsen, a situation is described in which cell credit information may not be transferred to the correct fabric interface module (FIM) 160 from the ingress memory subsystem (iMS). With reference to FIG. 1, it is described that there are four Port Protocol Devices (PPDs) on the ingress I/O board 120, each PPD being arranged to communicate with the same iMS 180.

In paragraph [0102] in Carlsen, it is described that the iMS manufactured by AMCC does not return cell credit information to the same FIM that submitted the cell. Increment credit events 442 that should be destined for one of the cell credit managers 440 on a particular PPD, may well end up on another cell credit manager.

Therefore, in the case of using an AMCC iMS, a certain problem can occur and it is with this particular problem in mind that the solution then discussed is proposed. The solution requires the use of a "master cell credit manager 441" arranged to receive reports from each of the individual cell credit managers 440 on an I/O board. Specifically, as stated at paragraph [0103] in Carlsen "... the master cell credit manager 441 receives the cell credit event signals 442 from all of the FIMs 160 on an I/O board 120. This allows the master unit

to maintain a credit count for each SDA in its accumulator 447 that reflects all data cells entering and leaving the iMS 180.”

In other words, what is being described is a way of ensuring that the correct XOFF and XON data is maintained by the cell credit managers on a particular I/O board due to the specific way in which the board communicates with iMS (the AMCC iMS). This has nothing whatsoever to do with communicating further upstream congestion notification in respect of downstream congestion.

Furthermore, with reference to FIG. 1, each of the I/O boards includes four ports 0 to 3 on each of its PPDs. Hence, a total of 16 ports may be provided on each I/O board (see, last sentence of paragraph [0030] in Carlsen). The master cell credit manager 441 is provided for receiving information from the other cell credit managers in respect of each of ports 110 of the PPDs 130 on one I/O board, as shown in FIG. 9 in Carlsen.

In Carlsen, the manager 441 is thus for managing the XOFF masks at a *single* I/O stage. It performs no function at all regarding communication of congestion notifications to further upstream ports when one particular port is considered congested. The “across the board” phrase referred to by the examiner, apparently to support the contention that there is some regional congestion notification does have nothing to do with congestion notifications to further upstream ports when one particular port is considered congested. The statement “across the board” is simply referring to the process of ensuring that the XOFF masks on a particular I/O board are correct in view of the communication between the PPDs on that particular I/O board and the iMS.

Indeed, the master cell credit manager 441 in Carlsen, is specifically stated as being solely responsible for maintaining the credit counts and for comparing the credit counts with threshold values stored in its threshold memory 449. In other words, considering the relationship between FIG. 1 and FIG. 9, the four ports 0 to 3 shown in FIG. 1 correspond to the same four ports 110 of FIG. 9. The four PPDs on the ingress port 120 are shown in FIG. 9. Each includes a cell credit manager with the master cell credit manager 441 being provided on PPD2. Thus, the communication between the master cell credit manager 441 and the other cell credit managers 440 are all in respect of ports at the same stage, neither upstream, nor downstream of each other. The function of the master cell credit manager is to ensure that the correct FIM is addressed and incremented when there is a change in status. It has nothing to do with regional congestion notification.

Therefore, for at least the above reasons, Applicant respectfully submits that Carlsen does not disclose, teach or suggest the subject matter recited in claim 1. Therefore, Applicant respectfully submits that claim 1 is patentable over Carlsen.

Claims 26 and 39 are also patentable for at least similar reasons provide above with respect to claim 1. Claims 2-14 and 48 depend from claim 1. Claim 27, 28 and 35 depend from claim 26. Claim 40 depends from claim 39. Therefore, claims 2-14, 27-28, 35, 40 and 48 are also patentable at by virtue of their dependence upon claims 1, 26 and 39 and for the additional features recited therein.

CONCLUSION

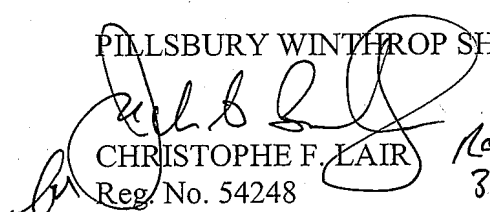
Applicant has addressed the Examiner's rejections and respectfully submits that the application is in condition for allowance. A notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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